

What is claimed is:

1. A radio transmitter comprising:

a power amplifier;

a variable gain amplifier connected in series with said  
5 power amplifier;

bias voltage apply means for applying a bias voltage to said  
power amplifier;

gain control means for controlling a gain of said variable  
gain amplifier;

10 bias voltage control means for controlling the bias voltage  
of said power amplifier; and

compensation means for compensating a gain variation of  
said power amplifier involved in controlling the bias voltage  
of said power amplifier by controlling the gain of said variable  
15 gain amplifier.

2. The radio transmitter according to claim 1, wherein said bias  
voltage control means controls the bias voltage of said power  
amplifier in response to desired output power of said power  
20 amplifier.

3. The radio transmitter according to claim 2, wherein said  
compensation means comprises information about relationships  
between the desired output power of said power amplifier and the  
25 bias voltage of said power amplifier, and information about  
relationships between the bias voltage of said power amplifier  
and the gain of said variable gain amplifier.

4. The radio transmitter according to claim 2, wherein the bias  
30 voltage of said power amplifier is varied at least at two steps.

5. The radio transmitter according to claim 3, wherein the bias voltage of said power amplifier is varied at least at two steps.

5 6. The radio transmitter according to claim 1, wherein said compensation means compensates for the gain variation of said power amplifier involved in controlling the bias voltage of said power amplifier, by deriving idle current of said power amplifier from desired output power of said power amplifier, by deriving  
10 the bias voltage of said power amplifier and the gain of said variable gain amplifier from the idle current of said power amplifier, and by supplying said bias voltage control means and said gain control means with the bias voltage and gain derived.

15 7. The radio transmitter according to claim 6, wherein said compensation means comprises information about relationships between the desired output power of said power amplifier and the idle current of said power amplifier, information about relationships between the idle current of said power amplifier  
20 and the gain of said variable gain amplifier, and information about relationships between the idle current of said power amplifier and the bias voltage of said power amplifier.

25 8. The radio transmitter according to claim 6, wherein the bias voltage of said power amplifier is varied at least at two steps.

9. The radio transmitter according to claim 7, wherein the bias voltage of said power amplifier is varied at least at two steps.